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# USSR Report

ENERGY

No. 106

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1 July 1982

## USSR REPORT

## ENERGY

No. 106

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## ELECTRIC POWER

### BOGUCHANSKAYA GES CONSTRUCTION REPORT

Moscow PRAVDA in Russian 15 Apr 82 p 1

/Article: "Another GES on the Angara River"

/Text/ Kodinskiy, Krasnoyarskiy Kray, 15 April, (PRAVDA correspondent V. Prokushev). On 17 April, All-Union Communist Subbotnik Day, the first cubic meter of concrete will be poured into the foundation of the dam of the Boguchanskaya GES. The construction of the fourth hydroelectric power station in the Angara River cascade will at that time begin a new and crucial stage.

The builders of the Boguchanskaya GES worked hard last year, having "shoveled" more than 100,000 tons of rocky earth. In September, one month ahead of schedule, they backfilled the coffer for the trench of the first section.

This past winter was a serious test of the Boguchanskaya GES builders' workmanship and courage. Having closed off the coffer, they pumped water from the trench so that they could begin deepening it. To pour concrete they had to remove no more and no less than 250,000 cubic meters of rocky earth. Not an hour could be lost. But a threatening barrier unexpectedly blocked the work of the blasters, excavator operators, and BelAZ drivers: every hour as much as 2,000 cubic meters of so-called filtering water began filling the trench.

The brigade of M. Brudnev was sent to fight against this problem. In the northern piercing wind the pumps froze and would not start. But the men were stronger: unwillingly, millimeters at a time the water began to recede. They did not wait for it to completely drain - they geared up to blast and use a re-equipped excavator to remove the earth from under the layer of water.

In a word, the considerable experience and tested character of the hydroelectric power station builders was victorious. Let us take a look at Maksim Vladimirovich Brudnev. He has never chosen easy paths:

as an adolescent during the war he went to work at a plant in Komso-mol'sk-na-Amure; then he helped to build the Krasnoyarskaya GES; he returned home to Zeya; and now he is again in the front ranks of the first to volunteer. Such men can shoulder any difficulties.

In addition to the trench, they are building an airport, roads, and the workers' settlement of Kondinskiy. Modern housing units consisting of five and nine-story buildings are already beginning to take shape.

Now, when the concrete work will get underway, the tasks of the builders will become more complicated. As quickly as possible they must decide how to organize the smooth production of a great deal of concrete. The gravel-sorting facility is going up slowly; and there are not enough railroad approaches. And the customer - the directors of the future GES - does not always supply the builders with high-quality technical documentation.

The construction of the Boguchanskaya GES is entering a new stage in its development. This requires even better organizational work and more responsibility on the part of all who are participating in the construction of the hydroelectric power station.

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## ELECTRIC POWER

### ROSTOVSKAYA AES CONSTRUCTION REPORT

Moscow EKONOMICHESKAYA GAZETA in Russian No 16, Apr 82 p 9

/Article by L. Shamardina, correspondent, Volgodonsk, Rostov Oblast:  
"Around the Dam: How To Speed Up the Construction of Facilities for  
the Rostovskaya AES"

/Text/ As a rule, special cooling ponds must be built for atomic electric power stations. At the Rostovskaya AES due to its special situation near a large body of water, they have been able to come up with another, more economical solution.

Meter by meter the dam proceeds from the shore. The ten-kilometer crescent of the dam will separate the bay of the Tsimlyanskoye reservoir. These 50 square kilometers of water surface, which are set apart from the reservoir by a reliable, multi-layered wall, will become the cooling pond.

The construction of the dam must be completed no later than September of 1984. To accomplish this it is necessary to pour 120,000 to 130,000 cubic meters of rubble stone into the body of the dam every month. As of now the actual pace of the work is 35,000 to 40,000 cubic meters every month.

The rubble stone is brought to the construction site from Repnyanskiy quarry in vertushka trains. At the Volgodonskenergostroy /Volgodonsk electric power station construction/ Trust they decided that in order to speed up the work another administration - an administration of mechanized work (USMR) - would begin working on the other end of the dam to do backfilling. This was worked out with the Atomenergostroy /Atomic electric power station construction trust/ administration.

If a "vertushka" is unloaded at Atomenergostroy, the representatives of the USMR, having left the crane and bulldozer in the steppe, leave to do other jobs. While the USMR is receiving stone, equipment and people are idled at Atomenergostroy.

With all of this disorder among the two organizations the dam is proceeding slowly. And the delay is increasing. What is needed to ensure that the dam increases in length by 40 to 50 meters every day? In the opinion of the railroad workers it is necessary to increase the reserve and to lengthen the unloading platform at the Atomenergostroy site and then to expand unloading operations. In practice this requires nearly one million rubles in additional expenditures and further delays in the time periods amounting to two to three months. And the desired result will not be obtained. Here is why.

One train represents 1,000 cubic meters of stone. It takes four and half hours for a special section of the Atomenergostroy administration to unload such a train. But the interval between "vertushkas" is 32 hours on the average. This is more than enough to transport the stone and put it into the dam with some left over. We shall note that each 1,000 cubic meters of stone lengthens the dam by 10 meters altogether.

At present there are four "vertushkas" running between the quarry and the construction site. Twelve are needed. As regards room for unloading, there is almost an unlimited amount of space in the steppe where the USMR is operating. Thus there is no substance to the argument that the unloading platform needs to be lengthened.

The dam needs a single boss, who is assiduous and motivated - Atomenergostroy. In addition to everything else, such a decision will make it possible to maneuver equipment and to reduce the "shoulder", by putting the emphasis on the nearest site, where the USMR is now so carelessly functioning.

The deputy chief of Atomenergostroy, Ye. Larin, and the chief in charge of the construction of the dam, A Krasnopol'skiy have this to say:

"If they put all of the equipment and both unloading sites under our supervision, then without additional expenditures and by just being able to maneuver and to employ a three-shift operation we will be able to accept 40,000 to 50,000 cubic meters of stone every 24-hours."

The solution seems rather simple. The Volgodonskenergostroy organization has the next word. Particularly since the railroad workers of the Sal'skiy and Likhovskiy departments, which service the line between the quarry and the construction site, have contracted with the builders to cooperate and have promised to provide the needed pace for delivering construction materials.

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## ELECTRIC POWER

### BUREYSKAYA GES CONSTRUCTION REPORT

Moscow STROITEL'NAYA GAZETA in Russian 24 Mar 82 p 2

/Article by O. Kvyatkovskiy, correspondent, Zeya - Novobureyskiy - Talakan, Amur Oblast: "A Box of Knowledge for Bureya"

/Text/ From the editors. After this article was already prepared for release, the USSR Ministry of Power and Electrification informed us that the Collegium of that ministry has approved a design for the construction of a building near the dam at the Bureyskaya GES. Thus, one of the shortcomings has been eliminated. But this does not at all alter the overall situation at the construction site. The construction site has been forced to "mark time" due to the extended agreements.

For dozens of years the restive Bureya River has enticed hydroelectric power station builders. Even before the war its gigantic electric power potential was estimated. In 1960 they developed a diagram for the comprehensive use of the Amur River tributaries. It was planned to build several GES's on the Bureya River and to send the power to the growing cities of Blagoveshchensk, Khabarovsk, and Komsomol'sk. Specialists emphasized that dams on the Bureya river would protect hundreds of thousands of hectares of valuable arable land in the Far East from flooding.

But a considerable amount of knowledge on the construction of hydroelectric power stations was needed - such as that obtained from the construction of the Zeyskaya GES. Yes, the Zeya was the first and the pride of Far Eastern hydroelectric power station building. But in comparison with the Zeyskaya GES, the Bureyskaya GES is a giant. Six units with a total rated capacity of two million kW. This is more than seven billion kW-hours of electricity per year. The dam rises some 143 meters - higher than the Bratskaya, Zeyskaya and Krasnoyarskaya GESs - in the Talakanskiy range. It is impressive! But we will not fall into the pathetic element. It is too early for that.

During the six years of the construction work on the hydroelectric power stations on the Bureya River, 10 percent of the funds allocated and required for the start-up of the first unit have been assimilated. The story of this construction site, its present status, and prospects for the near future is a sad tale of lost time. And what is even more pathetic - the tale is not a new one. The lessons learned from the Bratsk and Krasnoyarsk stations are well known. It has been demonstrated that the 16 years required for the Zeya station is an unjustifiably long period of time. The opinion of major Soviet specialists is well founded: by reducing the amount of time required for the preparation work in the creation of each hydroelectric power station from five to six years of time can be won.

However, the tactics of building the Bureyskaya GES did not take this into consideration; they remained the same as before.

The main emphasis here was placed upon the natural switching of mastery, knowledge and experience - all opportunities of the remarkable collective, which evolved in the administration of the Zeyagesstroy /Zeya hydroelectric power station construction organization/. It was this firm confidence in what had been tested by the first Far Eastern dam builders that led the chief of the administration, Hero of Socialist Labor A. Shokhin and his closest associates, when the first circuits of the new project were planned. This confidence justified the boldness with which the builders approached the Bureya River.

They planned to be the first in Far Eastern practices to make use of the continuous method of pouring concrete; they made several changes in the structure of the dam itself and the layout of the start-up; and they insisted upon the rapid construction of a comfortable, permanent settlement. The logic behind their conclusions was clear: to reduce the time periods for the preparation and execution of work, and in the final analysis to realize significant savings of state funds. The powerful hydroelectric power station could completely avoid the fate of its predecessors.

No one anticipated the pause which lasted for six years. Thousands of Zeyskaya station builders competed for the right to go to Talakan and to participate in the initial work. Today the number of construction workers "from the first peg" on the Bureya River project can be counted on your fingers.

The disputes of several years standing between specialists of the USSR Ministry of Power and Electrification's Leningrad Hydroelectric Power Station Design Institute /Lengidroyekt /Leningrad Hydroelectric Power Station Design Institute/ and Zeyagesstroy on several technical solutions can scarcely be called substantial. More to the point they are of a petty nature and of a narrowly departmental interest. The dispute was surrounded by engineering complexities and doubts with a scientific flavor. This led to a prolonged disagreement. The collegium of the USSR Ministry of Power and Electrification should have

assumed the role of arbitrator. But this role was entrusted to Orgenergostroy /All-Union Institute for the Designing and Organization of Power Station Construction/, the attacks of which were repelled by the Lengidroyekt with elegant carelessness. We will not go into all of the technical details, but will note that until quite recently the design for the placement of the GES building had not been approved. Without this it was impossible to define the work plan and to compile a realistic plan.

For four years in a row the financing of the work on the Bureya River was held at 7 million rubles. These monies were quietly used to construct facilities for the industrial base in the settlement and at the transshipment point on the Trans Siberian railroad. Roads and a temporary settlement were created. At the same time the collective of the Bureyskiy construction and installation administration of Zeyagesstroy had to build a 78-kilometer stretch of a high-voltage power transmission line on its own, since a shortage of electricity had on several occasions threatened the very existence of the construction project. Just as the work on the Zeyskaya GES was coming to an end, there was a sharp drop in work volumes. And the seasoned specialists began leaving. By this time the administration collective has been reduced by nearly 50 percent. Now the Zeyskaya GES builders can be encountered in various regions of the Far East, except at the construction site of the Bureyskaya GES. The vagueness of prospects has closed the road to people.

N. Fomenko, secretary of the Bureyskiy Rayon Party Committee, says with conviction: "Someday the Bureya's time will come. Particularly, since work on the Nizhnebureyskaya GES will commence this year. This GES is located next to a railroad. The all-hands method will have to be used to reach the river, which includes large shipments in volumes for which the builders are not prepared. We would like to avoid this."

It is not just the financing that is delaying the work today. The temporary settlement is almost filled with people. There is no way to accept people even with the goal of future volumes: the permanent settlement does not have a general plan. And it is not at all clear what sort of housing units are to be built and where the panels are to come from. The First Deputy Minister of Power and Electrification Falaleyev has repeatedly, in the presence of witnesses, solemnly promised to provide the Bureyskaya GES with a house building combine. But the first five-story buildings went up in temporary Talakan; these buildings were made of Zeyskiy panels delivered at great labor and from a great distance.

We shall assume that a house-building combine for Bureya is an unsolvable problem at a ministerial level. But if you travel into the settlement from the power station through the reddish hills, you run into the pathetic supports of the high-voltage power transmission lines - without wires they greatly resemble burnt trees. This power line is urgently needed by the Talakan builders; in the full sense of the word

the problem is in their hands. But the USSR Ministry of Power and Electrification does not plan to supply the 30 kilometers of wire until the fourth quarter! This means that in the winter the heavy excavators will again start working and the settlement will be frozen solid, and that aircraft will have to be used to bring in spare parts for the outdated power trains.

Probably there is no need to go into the details to demonstrate the difficulties that are being encountered by the construction workers on the Bureya River. They are apparent and intensified - be it the repair of equipment, the augmentation of the motor vehicle park, deliveries, the structural reorganization of the construction and installation administration... But one way or another they all become key problems. In conditions of the growing need for electricity in the region, each condition which lengthens the time for the creation of the Bureyskaya GES must be viewed as an emergency.

The spanning of the Zeya River took place in the eighth year of work following the landing of the first builders. In the seventh year of Talakan the builders cannot even dream of spanning the river. This tale of lost time sounds even more alarming. Alas, the time cannot be recovered.

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## ELECTRIC POWER

### NIZHNEKAMSKAYA GES CONSTRUCTION REPORT

Moscow PRAVDA in Russian 23 Apr 82 p 3

/Article by R. Sabirov, PRAVDA correspondent, and Kh. Mukhametshin, SOTSIALISTIK TATARSTAN correspondent, Tatar ASSR: "Equalling the Record"7

/Text Four power units are to be put into operation at the Nizhnekamskaya GES this year. How is work proceeding at the power station construction site?

The taut days of last December, when the collective of the Spetsgidromontazh /Special Hydroelectric Power Station Installation Trust Trust installed the eighth unit of the power station within a record time period - 33 days in all, are still fresh in the memories of the Nizhnekamskaya GES - the final stage in the power cascade of the Kama River. This success was achieved through the use of a progressive method - the preliminary enlarged assembly of portions of the power unit at special sites. The rapid work pace is still being maintained. The builders are seeking to secure and develop their success.

A. Baykov, the chief of the sector of the trust, reports, "the organization of labor on the eighth power unit was a unique standard for us. We managed to almost halve the time periods required for the work. We are sustaining the same taut, but realistic schedule even now. This year we expect to install and hand over for operation another four units with a total rated capacity of 312,000 kW."

"Brigade specialization helped to achieve this success. On the eighth power unit, for example, one brigade was engaged in assembling the rotor, another worked on the stator, a third worked on the operating impellers, and so forth. By the way, this did not hinder the ability of people to exchange jobs - each worker can at any time take over the task of his comrade."

The installers are working diligently these days. In May they are to hand over the ninth power unit for operation.

We are at the power station's dam. Below the water of the Kama River seethes and foams. But above the dam the water is extremely calm. Soon the locks will permit the steamships and barges from the Kama, Oka and Volga rivers to pass. Work is in full progress here.

Ahead of us is the brigade of concrete workers from the Nizhnekamskgesstroy /Nizhnekamskaya GES Construction/ Administration, which is under the supervision of Z. Yunosov. This brigade was the initiator of the competition to provide a worthy greeting for the 60th anniversary of the formation of the USSR. The collective has already fulfilled two of its annual assignments. Now each worker is daily realizing two shift norms. At this time the brigade is working in the craters for the tenth and eleventh power units. The workers were the first to switch to the brigade contract at the construction site. They have pledged to pour no less than 6,000 cubic meters of concrete this year. They are strictly adhering to their word. For the period January through March and the first three weeks of April they have already poured more than 2,000 cubic meters of concrete into the body of the power station. The comprehensive brigade led by R. Fatkhutdinov has almost reached this level.

The Nizhnekamskaya GES is being built and is already operating. It has already provided the national economy with more than two billion kW-hours of electricity. The completion of its construction is awaited with impatience by the railroad workers and truck drivers. Over the roof of the GES machine room will pass very important railroad and motor vehicle bridges over the Kama River; these overpasses are very important to the national economy of the autonomous republic and the entire Volga River area.

The Nizhnekamskaya GES builders are working very hard. However, they are concerned about several unresolved problems. Above the dam the enormous Nizhnekamskoye reservoir is being created, which will flood a great deal of agricultural land and oil fields if steps are not taken in time and reliable protective facilities are not built. The creation of dams within the Tatar ASSR and the Bashkir ASSR is significantly behind schedule and is not keeping pace with the construction of the GES itself. In the last five-year plan alone the builders failed to assimilate nearly 12,000,000 rubles. There is a real threat that the power units being put into operation this year for the power station will not be able to provide electricity due to the lack of adequate water pressure.

The builders and operators of the GES have serious claims against the Novosibirsk Sibelectrotyazhmash /Siberian Electrical Heavy Machine Building/ Plant and the Kamkabel /Kama Cable/ Plant for failing to deliver important equipment on a timely basis.

The Nizhnekamskaya GES must become operational during this five-year plan at full capacity. In order to adhere to the established time periods for the construction and hand-over of the GES, it is necessary for all enterprises and organizations participating in the project to function smoothly and in an organized manner.

## ELECTRIC POWER

### BRIEFS

URENGOY LEP--Electricity has reached one of the northernmost Western Siberian natural gas deposits - Urengoy. A 600-kilometer LEP, which links the main gas field with the Soviet Union's unified power system, has been put into operation. /Text/ /Moscow EKONOMICHESKAYA GAZETA in Russian No 7, Feb 82 p\_3/ 8927

KURPSAYSKAYA GES POWER LINE--A high-voltage power transmission line between the Kurpsayskaya GES and Suzak in the Kirghiz SSR, a distance of 130 kilometers, has been placed under load. /Text/ /Moscow EKONOMICHESKAYA GAZETA in Russian No 7, Feb 82 p\_3/ 8927

DEM'YANSKAYA-SURGUT SUBSTATION--A second power bridge will join the /oil/ fields of the Central Ob' River area with the Urals. The northernmost sector, the Dem'yanskaya to Surgut substation, has been put into operation. /Text/ /Moscow EKONOMICHESKAYA GAZETA in Russian No 7, Feb 82 p\_3/ 8927

KUVANDYK-ORENBURG ELECTRIFIED RAILROAD LINE--A 200-kilometer stretch of electrified railroad line has been put into operation on the section between Kuvandyk and Orenburg. /Text/ /Moscow EKONOMICHESKAYA GAZETA in Russian No 7, Feb 82 p\_3/ 8927

MARY-KARAKUL' LEP--The final, sixth 210,000 kW power unit of the first section of the Maryyskaya GRES imeni 50 Years of the USSR has been put into operation; also, a high-voltage power transmission line between Mary and Karakul' has been completed. In difficult natural conditions large power industry facilities have been built, which are of great importance in the development of the production forces of the Turkmen SSR and other republics of Central Asia. For this remarkable labor victory, Comrade L. I. Brezhnev has warmly congratulated all who participated in the construction of the new power station and power transmission line. /Text/ /Moscow EKONOMICHESKAYA GAZETA in Russian No 6, Feb 82 p\_3/ 8927

NAVOYYSKAYA GRES REPORT--The construction of the Navoyyskaya GRES has been successfully completed; it has been put into operation at full capacity - 1,250,000 kW. The construction in complicated natural and climatic conditions of a large thermal electric power station, which

will burn locally available natural gas, is a major contribution to increasing the energy potential and the development of the industrial and agricultural production of the Uzbek SSR and other union republics of Central Asia. L. I. Brezhnev has warmly congratulated the workers, engineers, technicians and all who participated in the construction of the Navoyyskaya GRES for their tremendous labor victory. /Text/ /Moscow EKONOMICHESKAYA GAZETA in Russian No 11, Mar 82 p 57 8927

KIEVSKAYA TETS-6 REPORT--The first power unit of the Kievskaya TETS-6, the largest in the Ukraine, has been put into operation. The rated capacity of the unit is 250,000 kW of electricity and 560 gigacalories of heat per hour. /Text/ /Moscow EKONOMICHESKAYA GAZETA in Russian No 11, Mar 82 p 57 8927

MOLDAVSKAYA GRES REPORT--The Order of the Red Banner Moldavskaya GRES imeni 50 Years of October, which in the new city of Dnestrovsk is the flagman of the Moldavian SSR's power industry. The electricity generated by the power station will go to the cities and villages of the republic and several southern oblasts of the Ukraine. There are now 12 power units in operation at the GRES. Their rated capacity has already exceeded 2,400,000 kW. During the days of the labor watch in honor of the Ukrainian SSR a steam and gas unit, which operates in a concert with the eleventh power unit, was put into operation. Scientists and specialists from Khar'kov and L'vov actively participated in the installation and adjustment of the steam and gas unit. Their assistance made it possible to put the complex into operation at the assigned level. A second steam and gas unit is now being installed at the Moldavskaya GRES. /Text/ /Kiev PRAVDA UKRAINY in Russian 23 Mar 82 p 17 8927

SVIR'-PETROZAVODSK LEP-330--A powerful LEP-330 has been put into operation between Svir' and Petrozavodsk, a distance of 132 kilometers. The completion of this line provides a reliable power supply to the developing industrial regions of Petrozavodsk, and especially Kondopoga. The installers of mechanized columns No 6 and No 46 of the Sevzapelektroset'sstroy /Northwest Electric Power Network Construction/ Trust labored diligently to build the new LEP. The route of the LEP passed through swamps and tayga. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 7 Mar 82 p 17 8927

NEW LEP ON KOLA PENINSULA--A powerful rural high-voltage power transmission line is now being built in the forested tundra of the White Sea coastal area of Kola Peninsula. It will join the fishing settlements of the area with the rayon center - the village of Umba. The new LEP will promote the further development of agriculture in the coastal area. For there is more land to be reclaimed here than in other places on the peninsula. The machine operators and builders, who will assimilate the virginland, will follow the power workers into this area. Agricultural production is a rapidly developing sector of the national economy of Murmansk Oblast. One can readily see this

in the amount of electricity available to its enterprises. Last year, for example, the centralized generation of electricity for rural consumers increased by nearly one third as compared with the preceding year. In the 11th Five-Year Plan this indicator will triple. /Text/ /Moscow KRASNAYA ZVEZDA in Russian 14 Feb 82 p 1/ 8927

UST'-KUT LEP OVER VITIM RIVER--The first supports of the power transmission line, which extend from Ust'-Kut along the Baykal-Amur Main-line Railroad, have been installed on the right-hand shore of the Vitim River. Soon the electric power of the Ust'-Ilinskaya GES will reach the Chita section of the BAM - the settlement of Kuanda. Before the end of the year the collective of the mechanized column No 104 of the Vostoksibelektroset'sstroy /East Siberian Electric Power Network Construction/ Trust intends to install the supports and to hang wire at the 115-kilometer point of the Chita section and to reach the Kodarskiy tunnel. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Apr 82 p 1/ 8927

ATOMGRAD IN TATAR ASSR--Construction of a future "atomgrad" has gotten underway in the Tatar ASSR. The atomgrad is going up at the site of the village of Kamskiye Polyany. A temporary heating plant has been providing power at the construction site. The first multi-story buildings have already been built. The best collectives of workers, which are under the supervision of U. Naurbiyev and other praiseworthy brigade leaders, have been sent to build the new atomic electric power station. /Text/ /Moscow IZVESTIYA in Russian 23 Mar 82 p 1/ 8927

UST'-SREDEKASKAYA GES REPORT--Specialists from the Lengidroyekt Institute have decided on two spots where in the near future the dam of the Ust'-Sredkaskaya GES - the second in the Kolyma River cascade - may be built. An expedition from Lengidroyekt is drilling exploratory wells. The driller brigades of V. Vartenev and A. Grishchakov are working at a pace well ahead of the norm. Having agreed to increased pledges in honor of the 60th anniversary of the Soviet Union, they are laboring diligently to ensure that they meet their goals. /Text/ /Moscow STROITEL'NAYA GAZETA in Russian 24 Mar 82 p 3/ 8927

GEOLOGICAL MAP OF SOVIET NORTHEAST--To shorten the path to the underground storage rooms, prospectors will be ably assisted by a geological map of the far Northeast of the Soviet Union. The final compilation of this map was completed in Magadan. The map will "prompt" geologists on the spots of the most likely concentration of minerals, the direction of survey and exploration work within an area that occupies one sixth of the Soviet Union. More than 200 colors and shades of color and hundreds of symbols were needed to reflect on the map the scientific information on the geological structure of the earth's core in the area. This information was gathered over the past 50 years by thousands of geologists, geophysicists, and scientific workers. Four million kilometers is the total length of the paths covered in the tundra and tayga of the North. Today, in addition to the traditional hammer, the geologists use powerful drilling equipment and data obtained from aircraft and satellites. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 3 Apr 82 p 2/ 8927

LEP-500 FROM LUCHEGORSKAYA GRES--Vladivostok. Construction of the LEP-500 was completed prior to the anniversary of the opening of the 26th Party Congress. This had been the pledge of the power construction workers in the Primorskiy Kray. They have kept their word. A high-voltage power transmission line, a distance of 346 kilometers, is ready to accept current from the Luchegorskaya GRES and to transmit from the north to the south of the Kray. Less than two years ago in the deep tayga they began cutting a path for the LEP-500. In the fall of last year the first section was already in operation. And now the second section is ready. Power workers from Siberia, the Urals, the Kazakh SSR and other union republics helped the Primorskiy Kray builders to raise the LEP-500. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 25 Feb 82 p 17 8927

NERYUNGRI BOILER--A power water-heating boiler has been put into operation in Neryungri. It insures a stable supply of heat for the city, which is the center of the Southern Yakut TPK. Unique equipment has been installed here - the Soviet Union's first hot-water boilers to burn coal dust. From the start of the construction to the first stoking of the first boiler has taken only slightly more than one year - such is the pace provided at this key facility of the complex by the subelements of the Neryungrigresstroy /Neryungri GRES Construction/ Administration and the subcontracting organizations. /Text/ /Moscow STROITEL'NAYA GAZETA in Russian 3 Feb 82 p 27 8927

TYUMEN' TETS REPORT--Tyumen'. The construction of a large thermal electric and heating plant in Tyumen' has been declared a shock project. The construction of the new plant led to the rapid development of the capital of Siberian oil. The rated capacity of the future TETS is in excess of 1,700 gigacalories of heat per hour. It will burn natural gas from northern deposits. /Text/ /Moscow SEL'SKAYA ZHIZN' in Russian 25 Feb 82 p 17 8927

NERYUNGRINSKAYA GRES REPORT--An important stage has been reached in the construction of the Neryungrinskaya GRES - the pouring of concrete for the smoke stack. The height of the stack is 240 meters and the diameter at the foundation is 35.5 meters. This project is quite unique. It is estimated that the compression and expansion of the walls from the large temperature deviations and that there is seismic activity in the 8 ball range. For this reason the fittings for the 850 mm wall is doubled; and the most durable steel is used for the stack. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 20 Apr 82 p 27 8927

CHEBOKSARSKAYA GES REPORT--The fourth power unit of the Cheboksarskaya GES has been placed under industrial load. /Text/ /Moscow EKONOMICHESKAYA GAZETA in Russian No 17, Apr 82 p 37 8927

DNEPROGES REPORT--It stands above the great river as a symbol of the labor feats of the Soviet people during the years of the first five-year plans. This is not merely a monument to the laborers; it is the pride of the Soviet power industry. The first hydroelectric power

power station even today does not lag in meeting modern requirements. But the workers of the Ukrainian department of the All-Union Institute Hidroproyekt imeni S. Ya. Zhukov have started to develop a plan for the modernization of the GES. All turbines and generators of the Dneproges-1 will soon be replaced by new ones. The rated capacity of the power station will increase substantially. /Text/ /Moscow IZVESTIYA in Russian 19 Feb 82 p 27 8927

KOLYMSKAYA GES REPORT--The ship Sakhalin-6 has reached the moorings of the Magadan sea port, bringing a transformer for the next power unit of the Kolymskaya GES. The weight of this cargo plus the special railroad platform car exceeds 230 tons. The port workers are transferring the transformer to a special auto-train, which was dispatched to Sinegor'ye. The trip to Magadan was made by the Sakhalin-6 with the help of a powerful icebreaker, the Kapitán Khlebnikov, which is now accompanying a group of ships in the Sea of Okhotsk. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 11 Feb 82 p 17 8927

TRANSFORMERS FOR EKIBASTUZ--For the creation of the power bridge from Ekibastuz to the Center super-powerful transformers were required. Their production was entrusted to the Zaporozhtransformator Association. The first power units of the Ekibastuzskaya GRES were equipped with powerful assemblies at 630 kV-amperes bearing the mark of the Zaporozh'ye enterprise. Recently the Ukrainian electrical equipment builders manufactured transformers with an operating voltage of 1,150 kV of alternating current and 1,500 kV of direct current. In Zaporozh'ye a special ~~facility~~ facility is being built to produce super-powerful transformers. A new giant of industry is being built, which has twice won the order of "Dneptostroy". The complex covers some 56 hectares of land. The main assembly area will be equipped with bridge cranes capable of lifting as much as 1,000 tons. /Text/ /Moscow IZVESTIYA in Russian 3 Mar 82 p 27 8927

EKIBASTUZSKAYA GRES-1 SMOKE STACK--The concrete trunk of the smoke stack for the Ekibastuzskaya GRES-1 has reached a height of 330 meters, a record mark. Such is the giant growth of the project - the only one of its kind among the thermal electric power stations of the Soviet Union. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 28 Mar 82 p 17 8927

ROVENSKAYA AES REPORT--Kuznetsbvsk, Rovno Oblast. The collectives of the construction and installation organizations which are building the Rovenskaya AES have completed their production program for the first year of the five-year plan ahead of schedule. All work connected with the start-up of the second power unit with a rated capacity of 440,000 kW was significantly reduced; now work is successfully underway on the third power unit with a rated capacity of 1,000,000 kW. The administrations of the Yuzhteploenergmontazh, Energoyuzhmontazh, and Energovysotspetsstroy trusts, as well as others, are fulfilling their assignments well ahead of schedule. The diligent labor of the Polesk atomic power station builders has been highly rated. They were the winners of the All-Union socialist competition and were awarded the



Challenge Red Banner of the CPSU Central Committee and the USSR Council of Ministers, the All-Union Central Trade Union Council and the Komsomol Central Committee. At a solemn ceremony the banner was given to the representatives of the administrations for the construction of the AES by the First Secretary of the Oblast Party Committee, T. I. Panasenko. /Text/ /Kiev RABOCHAYA GAZETA in Russian 12 Mar 82 p 17 8927

LEP-500 FOR PRIMORSKIY KRAY--Work on Primorskiy Kray's first LEP-500 between the Primorskaya GRES and the Dal'nevostochnaya substation in the south of the Primorskiy Kray has been completed well ahead of schedule. Yesterday the LEP was placed under full industrial load. This power transmission line has a length of nearly 350 kilometers; it crosses tayga, mountains and swamps. It will provide a reliable source of electricity to the rapidly developing machine building, metal working, wood processing, ship repair enterprises, and the transportation junctions of Vladivostok and Nakhodka. The supply of electricity for agricultural enterprises and private customers will be increased. /Text/ /Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 17 Feb 82 p 17 8927

ZAPOROZH'YE TRANSFORMER PLANT REPORT--The command "Lift" was heard. And using a giant crane a 44-meter steel column rose into the air. In Zaporozh'ye work got underway to install the lead building of a unique complex for the production of super-powerful transformers. This complex will manufacture equipment for the 1,150 kV alternating current LEPs and the 1,500 kV direct current LEPs. Decisions of the 26th Party Congress were directed at significantly increasing the production of this equipment. The scientific-technical problem of organizing such an undertaking was solved in the Soviet Union for the first time in world practice. The giant electrical equipment which is manufactured by the Zaporozhtransformator Association has a rated capacity of 2,000,000 kW-amperes; the transformers will help to perform an important national economic task in the power unit - to create a power bridge between Siberia and the Center. The construction of the complex has been entrusted to the collective of Dneprostroy. In competing to start-up this key project ahead of schedule, the builders are working rapidly to prepare the installation of the foundations. But this is an important and complex matter: the foundations are a complicated engineering structure requiring exactness on the part of the builders. Nearly one month ahead of schedule the brigade of A. F. Khamuly, a delegate to the 26th Party Congress, is now driving a 30-meter piling beneath the foundation. As in the modernization of the Dneproges, the Komsomol brigade of concrete workers headed by A. Krivopishchenko is working diligently. "To start a large construction project is always a difficult thing," says the chief of the administration of Dneprostroy, Hero of Socialist Labor B. T. Kuz'menko. "To successfully overcome difficulties during the organizational period we have been greatly helped by the experience that we gained in the construction of Dneproges-2. At the complex we are adopting progressive methods of work, used for the first time on a large scale during



the modernization of the legendary electric power station. One of these methods is the comprehensive mechanized flow line, in which specialized brigades of subcontractors work according to a unified schedule." This year the Dneprostroy workers have pledged to assimilate nearly 10 million rubles in capital investments on this key project. By the year 1984 the complex will deliver the first super transformer for the power transmission line between Ekibastuz and the Center. The completion of the first section of this line was called for in the Basic directions for the economic and social development of the USSR. /Text/ /Kiev RABOCHAYA GAZETA in Russian 12 Mar 82 p 17  
8927

CSO: 1822/158

## PIPELINES

### SEPARATE PIPELINE SHIPMENT OF OIL BY SULFUR CONTENT MASTERED

Moscow IZVESTIYA in Russian 7 May 82 p 3

[Article by L. Levitskiy (Tomsk): "The Standard Bearer of Siberian Oil Pipelines"]

[Text] For the first time in the country the separate delivery of oil as a function of its sulfur content has been mastered.

Petrochemical workers need very badly raw material with a sulfur content as low as possible. Sulfur puts equipment out of operation, complicates production processes, and reduces product quality. It is necessary to go to great additional expense to get rid of the harmful impurities. That is why there is a special demand for low-sulfur crude. And it exists at many West Siberian fields. Unfortunately, during transport, raw materials of varying properties are mixed. The collective of the administration of Central Siberian trunk oil pipelines found a method for moving the liquid fuel by portions, depending upon its grade and composition. Scientists of the Tomsk Scientific-Research Institute for Nuclear Physics, which created an original instrument for rapid analysis of raw-material quality, helped it.

Right now low-sulfur crude is being pumped into pipelines, and instruments strictly close off and monitor its limits. After that, ordinary fuel passes at once, without interruption. Obviously, almost jewelers' precision is necessary, so that the target restrictions are maintained irreproachably over thousands of kilometers. The instruments and automation and remote-control devices are reliable sentinels.

The new technology was mastered for the first time on the Aleksandrovskoye-Tomsk-Anzhero-Sudzhensk oil pipelines. The pipeline workers of other areas have taken up the Tomsk workers' relay baton.

For a decade the operators of one of Siberia's giant fuel arteries observed this success. The Aleksandrovskoye-Tomsk-Anzhero-Sudzhensk oil pipeline, which is more than 800 km long, was the first in the world to be welded of 1,220-mm diameter pipe. CPSU Central Committee General Secretary Leonid Il'ich Brezhnev then warmly congratulated the builders for introducing this specially built trunk line ahead of schedule and wished that it be quickly brought up to its design capacity. The injunction was fulfilled with honor. The arterial has deservedly become for Siberians a school of advanced experience that is widely used for the laying of still larger arterials.

Many organizational and technical innovations have been tested for the first time here. The underwater welding of pipe, effective methods for cleaning pipelines, electronic instruments instead of human inspectors, an automated system for controlling all processes--this is a short list of the technical achievements. For the first time in the country the rotating-personnel method of servicing oil pump stations was used, saving about 30 million rubles. In 10 years the oil pipeline gave the national economy more than 400 million rubles of profit. All the expenditures on its construction and operation have been fully recuperated.

Mastering the selective pumping of crude as a function of its composition is one of the items of the high socialist commitments. The new technology has been introduced. A pipeline from the group of Vasyugansk taiga fields, whose oil is marked by very high quality, also has been converted to it. In all the administration's collectives, the results of the socialist competition that is being promoted are summed up daily. The Aleksandrovskaia oil pump station is in the lead. It is to turn over tens of thousands of tons of Siberian fuel above the task.

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## PIPELINES

### ERECTION OF COMPRESSOR STATIONS ON GAS PIPELINES MUST BE SPEEDED UP

#### Magnitude of Task

Moscow STROITEL'NAYA GAZETA in Russian 28 Mar 82 p 1

[Text] In order to deliver gas over vast expanses to the places of consumption, high pressure must be obtained inside the pipelines. It is for this purpose that we build compressor stations (KS's). The distance between them on gas pipeline routes is about 100-150 km.

Gas turbines, which the builders rightly name the heart of the facility, are usually installed at the compressor stations. The turbine drives the pump that actually moves the gas forward. At each KS, 6-9 turbine-driven compressors with capacities of up to 10 mw per unit are installed.

The total power of the gas-compressor stations that must be put into operation during the 11th Five-Year Plan exceeds 20 million kw.

The task that faces the builders is not a simple one. The more so since many KS's are to be introduced more rapidly than specified by the standard construction times for such facilities. The timely introduction into operation of the Novyy Urengoy-Central Economic Region gas-transport system and of an export strand of gas pipeline depends upon the performance of this task.

So we tell the reader about the problems of erecting the compressor stations in the collection of information that is offered here.

#### Work Status Summarized

Moscow STROITEL'NAYA GAZETA in Russian 28 Mar 82 p 1

[Article: "V. Nazarov's Collective Is Ahead"]

#### Construction of the Urengoy-Novopskov Gas Pipeline Progress of the Work on 28 March (in kilometers)

Subunits	Task left to complete project	Insu- lation	Lay- ing
Glavsibtruboprovodstroy .....	854	305	549
Glavvostoktruboprovodstroy.....	1,115	335	780
Glavtruboprovodstroy.....	965	495	470
Glavukrneftegazstroy.....	166	11	155

Subunits	Task left to complete project	Insu- lation	Lay- ing
Glavyuzhtruboprovodstroy.....	187	41	96
Soyuzintergaz.....	101	65	36
Mingazprom.....	(5 km--crossing of the Volga Reservoir has been completed)		
Total.....	3,343	1,252	2,086

#### Explanation of the Summary

On the Urengoy-Novopskov gas pipeline, 623 km remain to be rotary welded, but the gap between the length of the pipeline welded into the strand and that laid in the ditch still has not been reduced.

However, last week the average daily pace of laying the pipeline reached 30 km. This is for the present a record for output. The builders are confident that, if weather permits, this will be raised--to laying 1,000 km of pipe in a month. Individual collectives, particularly Soyuzgazspetsstroy [All-Union Trust for the Construction of Special Gas Enterprise Facilities] of Glavtruboprovodstroy, Soyuzintergazstroy and others are finishing the linear work and are beginning preparations for blowing through and testing the gas pipeline on their sections.

During the preceding week, first place in the competition among the collectives of the flow-line operating groups was awarded to V. Nazarov's flow-line group from Mosgazprovodstroy [Trust for Gas Pipeline Construction in Moscow].

#### Novokazymskaya Station Completed Early

Moscow STROITEL'NAYA GAZETA in Russian 28 Mar 82 p 1

[Article by A. Zhdanov (Tyumenskaya Oblast): "Three Times as Rapidly"]

[Text] Erection of the Novokazymskaya Compressor Station on the Urengoy-Petrovsk gas pipeline was completed in one-third the standard time, on the eve of the opening of the 17th USSR Trade Unions Congress. In the specialists' opinion, the success was provided by:

#### 1. The Combined Flow-Line Group Method

V. Morokhovets, chief engineer of Kazymgazpromstroy [Kazym Trust for the Construction of Gas Industry Enterprises]:

"The standard period for erecting a compressor station of this type is 24 months. The Novokazymskaya station was erected in 8 months.

"The pace was accelerated thanks to introduction of the combined flow-line method of organizing construction. Its essence is the presentation of a broad front at once to many interdependent workers and simultaneous performance of several operations. With an estimated cost of about 9 million rubles for erecting the station, 700,000 rubles were saved."

## 2. A Strenuous Schedule

V. Arabadzhi, brigade leader of SU-35 [Construction Administration No 35] of Kazymgazpromstroy:

"We had one crane and it was needed by many interdependent workers. Its work was scheduled literally by the minute. And not just the crane. The strenuous operating schedule of the flow-line method raised production discipline and forced all collectives participating in erecting the compressor station to prize each minute of worktime.

"The fact that many of our workers possess several related specialties played a major role in successful fulfillment of the tasks."

## 3. "The Workers' Relay"

Ye. Dobrosmyslov, secretary of the party committee of Kazymgazpromstroy:

"Collectives of the Sibkomplektmontazh and Tyumentransgaz Associations, Tyumenneftegazmontazh Trust, vehicle drivers, river workers and equipment suppliers adopted the 'Workers' Relay' during construction of the compressor station. An agreement on integrated competition under the 'Workers' Relay' principle was approved by the Tyumenskaya Oblast Committee of the party, and it was reinforced by concrete engineering and ideological measures."

N. Kurbatov, chief of Glavsibtruboprovodstroy [Main Administration for Pipeline Construction in Siberia], sums up the results:

"Accelerated introduction of the KS enabled the 800-km section of the gas pipeline to Petrovsk to be tested without involving the capacity of the operating strand at Gryazovets. Fuel flowed to the customers without interruption.

"According to our calculations, the prescheduled introduction of the compressor station means about 20 million m<sup>3</sup> of gas above the plan."

### Republic, Oblast Organizations Help

Moscow STROITEL'NAYA GAZETA in Russian 28 Mar 82 p 1

[Article: "Without Compressor Stations There Is No Line"]

[Text] Speed up construction of most important facilities on the gas pipeline routes.

The trunk gas pipelines that have their start at Urengoy stretch to our country's western frontiers. Help for the builders is being organized in the republics and oblasts.

They are sponsoring:

Permskaya Oblast. The Permskaya Oblast CPSU Committee has developed a detailed plan of measures.

The staff is working actively to extend help to the line workers through the Gornozavodskiy Rayon CPSU Committee. It held a meeting directly at the Gornozavodskaya station, which is due for early startup but whose erection had lagged. Right now hundreds of construction workers, as well as high-powered equipment, have been concentrated at the construction site. Operations at the KS [compressor station] are close to completion.

In Berezovskiy Rayon, Novosibirsktruboprovodstroy [Novosibirsk Pipeline Construction Trust] was given help in hauling reinforced-concrete anchor weights to the route.

Ukrainian SSR. On the Urengoy-Uzhgorod route, Vinnitspromstroy [Vinnitsa Industrial Construction Combine] and Cherkaspromstroy Combine should build two compressor stations--the Il'intsovskaya and the Sofiyevskaya.

Republic and oblast party organizations and UkSSR Minpromstroy [Ministry of Industrial Construction] are doing everything necessary to introduce these important gas pipeline facilities on time.

Help has been extended to the builders in organizing the expeditionary rotating-personnel method of erecting KS's, introduction of the outfitted-module method of erecting the equipment, and the use of lightweight metal constructional structure fully prepared at the factory.

#### Working, Living Conditions

Moscow STROITEL'NAYA GAZETA in Russian 28 Mar 82 p 1

[Article by A. Serbinov, holder of the Order of Labor Red Banner and brigade leader of Vostokmetallurgmontazh (Krasnotur'insk, Sverdlovskaya Oblast): "When We Are on Rotating Duty"]

[Text] Concrete concern about the concrete person, his needs and requirements is the initial and the final point of our economic policy. That is why such great attention was paid at the 17th USSR Trade Unions Congress to concern about the man of work.

Unfortunately, the possibilities associated with improving people's working and living conditions still are not being realized to the utmost. For example, it is very difficult today to acquire labor resources for erecting trunk gas pipelines, since not enough of the amenities have been built for the workers.

We are erectors, and that means that we spend a major portion of worktime away on the job. On the short days off we meet at the administration or trust and exchange opinions. I shall speak frankly: no one complains about the hardness of the work. We are provided with machinery. At our Krasnotur'inskaya KS [compressor station], the prime contractor, Uralenergostroy [Trust for the Construction of Power-Engineering Facilities in the Urals Economic Region], has given us a broad work front on time, but it has not been possible to avoid losses.

We came to the construction project at the beginning of the year. We lived in the construction administration's recreation room--16 men in one room. It was

uncomfortable and cold. The sending of people to the facility was poorly arranged. There are also losses from this. Add to this unjustified squandering of worktime for eating: for 2½ months we rode several kilometers into town. More frequently than not it was in an open vehicle, wasting 1½ to 2 hours.

We understand that it is difficult to arrange living conditions quickly, especially in the thinly populated regions of the northern Urals. During construction of the Pelymskaya gas compressor station, for instance, the builders had absolutely no fixed housing at all.

But the fact that gas compressor stations would be built in these places was known long ago. Back in the spring, the brigade leader, M. Petrusev, of the Sverdlovsk Installing Administration No 1 of Uralmetallurgmontazh Trust wrote in an article, "The Target Is at Idel'," which was published in STROITEL'NAYA GAZETA, that the trust's supervisors did not pay proper attention to preparing living conditions for the builders of the most important facilities on the route. At that same Idel'skaya KS, there was no drinking water in the brigade's mobile housing for a long time. People rode with teapots and cans for it...on 12-ton dump trucks, for many kilometers. Nothing was done about the problem.

The Urengoy-Petrovsk gas pipeline, as with other facilities of the gas-transporting system, is the central construction project of the 11th Five-Year Plan. That means that the attitude toward it must be commensurate. Glavsreduralstroy, for example, is creating at Ivdel'skaya station a construction workers' settlement for 450 people. It is erecting housing from container modules, which are made at Stroydetal' Trust No 70 plants. It prepared and hooked up electric-power, water and sewer lines--and the dormitory was ready. A room for two people. There are cupboards for clothing, and each container module has a kitchen. There will be a dining room, a store, a club and a bath in the settlement. Unfortunately, no one else has any more such settlements yet in the Urals. True, we live not far from Krasnotur'insk. The town's party committee and the executive committee are helping us. But it is not within the power of one small town to solve all the problems.

Right now there are not many more than 100 erectors at our construction project, but in April there should be about 400. Where will they be put and fed when they are sent to the construction project? That is why the help of oblast organizations, the prime contractor and the supervisors of all subunits that are participating in the erection of the gas compressor station is needed. The concern about people, as was emphasized at the 17th USSR Congress of Trade Unions, is a common concern.

Recently we finally opened a dining room at the site. The store began to operate. But the dining room was designed to seat 40, and there were more than 1,000 workers here. The difficulties are increasing.

For construction of the Pelymskaya station, there are new buses that were assembled at the Urals Motor-Vehicle Center. They are very convenient, and the body is heated inside. But our industry produces few of these buses. At a conference in Krasnotur'insk, Deputy USSR Minister of Construction of Petroleum and Gas Industry Enterprises A. Vesel'yev said that the plant in Nizhnekamsk that produces such rotating-personnel vehicles is being built slowly, and its capacity is being assimilated even worse than that. Meanwhile, such vehicles are badly needed in the northern environment.



I have been working at Urals construction projects for 35 years, 25 of them as a brigade leader. I always recall with satisfaction the erection of the asbestos combine in Orenburgskaya Oblast. There we never experienced difficulties in traveling from the settlement to the construction job site. All the buses stopped at the workers' dormitories in the morning. After the shift, not one vehicle left without the permission of the dispatcher, who knew each organization and when it finished work. For it was often impossible for the builders or installers to get off at the designated hour.

Unfortunately, there is no such procedure during construction of the gas compressor: if you are delayed--you catch it in the city as best you can. And indeed, no great efforts are required to solve this problem.

The construction workers are confidently picking up the pace at all the gas compressor sites of the northern Urals. We do not let people down, we turn jobs over at the appointed time. For their part, supervisors of construction organizations, and also of oblast and city party, soviet and trade-union organizations, should take all the necessary measures to insure that the workers have good living conditions. The decisions of the 17th Congress of USSR Trade Unions obliges them to do this.

#### Late Equipment Deliveries

Moscow STROITEL'NAYA GAZETA in Russian 28 Mar 82 p 1

[Letter by V. Parshin and V. Melikhov, brigade leaders of Lipetsk Installing Administration No 2 of Metallurgprokatmontazh Trust, and responding comment by P. Alekhin, deputy chief of Glavuprkhimprommontazh of USSR Minmontazhspetsstroy [Ministry of Installation and Special Construction Work]: "Blind Alley at the Flag Stop"]

[Text] "Our installing administration has been charged with erecting a compressor station close to Yelets. Together with a collective of the Lipetsk Construction Trust, we undertook a commitment to turn the KS [compressor station] over half a year early--in June of this year.

"The builders presented us with a work front 2 months ago, but it was impossible to do the installing work. In January-February not one ruble of investment had been assimilated. The Mingazprom [Ministry of Gas Industry] client is delaying. It still has not arranged for the delivery of the equipment to the construction project. Only 10 units of equipment have arrived, out of the 282 units agreed upon, at the Pazhen' flag stop, which is several kilometers from the job. Thus it is that we turn out to be in an unusual blind alley.

"V. Parshin and  
V. Melikhov,  
brigade leaders of Lipetsk Installing Administration No 2 of Metallurgprokatmontazhstroy Trust"

P. Alekhin, deputy chief of Glavuprkhimprommontazh of Minmontazhspetsstroy comments on the letter at the request of the editorial board:

"USSR Minmontazhspestroy has been given the task of installing the equipment at 123 gas compressor stations, 9 of which must be put into operation this year. The task is not easy.

"The USSR Minmontazhspestroy board has repeatedly reviewed the question about progress in erecting compressor stations and it has noted with anxiety that the prevailing situation does not meet today's needs. The delivery of the equipment, pipe, flanges, adapters and taps is delaying the deployment of the main forces of the installers. Later we shall have to make up for what has been neglected and intensify the operating schedule, for mere months remain prior to the startup of several stations, according to the schedule.

"The prime contractors of four ministries are treating start of the facilities' erection somewhat differently. While, for example, USSR Minenergo [Ministry of Power and Electrification] subunits are actively engaged in preparing a backlog of construction starts--and the work front for the installers is practically ready, at the Krasnotur'inskaya, Syzranskaya and Minskaya stations USSR Mintyazhspestroy [Ministry of Construction of Heavy Industry Enterprises] and USSR Ministroy [Ministry of Construction] are in great arrears to our brigades. Fulfillment of the approved measures is being delayed from month to month.

"The anxious message to the editorial office impels us to carefully check, again and again, the whole chain of mutual relationships of the construction participants. The principle of the 'Workers' Relay' must be promoted widely during erection of the compressor stations."

#### Concluding Remarks

Moscow STROITEL'NAYA GAZETA in Russian 28 Mar 82 p 1

[By the Industrial Construction Division of STROITEL'NAYA GAZETA]

[Text] It is not accidental that the compressor stations are called the pulse of the line. Without them the gas pipeline is simply a multikilometer-long pipe. Thus, on the Urengoy-Petrovsk route the linear part has now been finished, but not all the KS's [compressor stations] have been put into operation. Therefore, it is impossible to complete tests of the gas pipeline and turn it over for operation.

Today, accelerated erection of the compressor stations is the main problem of developing the gas-transporting system. On the three Urengoy-Petrovsk, Urengoy-Novopskov and Urengoy-Uzhgorod trunk gas pipelines alone, more than 100 KS's should operate. The majority of them still need to be introduced.

As is evident from the information in the selection of articles, innovators and advanced production workers have appeared during erection of the compressor stations. The bases of their success are progressive methods and ways for working, precise organization of the supplying of materials and equipment, and the introduction of effective socialist competition. It is these components that will allow the standard period for introducing the Novokazymorskaya KS into operation to be half as long as the standard.

Unfortunately, not by far are all the builders working as precisely and competently as the Kazymgazstroy Trust collective. For example, during erection of the

Tol'yattinskaya and Pavlovskaya stations, a serious lag behind the schedule was permitted only because Kuybyshevtruboprovodstroy [Kuybyshev Pipeline Construction Trust] of Privolzhskgazpromstroy [Volga Association for the Construction of Gas Industry] facilities, which were due for early startup, and they are not paying enough attention to raising labor productivity.

There are also other factors that hamper construction of the KS's. Chief among them is the nonfulfillment of contractual commitments. From this comes late presentation of the work front, delay in equipment deliveries, and a lack of coordination of actions.

One cannot help but agree with P. Alekhin, deputy chief of Glavuprkhimprommontazh of USSR Minmontazhspetsstroy, that wide dissemination of integrated competition of interdependent workers at the job sites will help to eliminate much of the confusion. We would like to remind all participants in the construction of the KS's that the initiative in organizing the "Workers' Relay" should proceed precisely from this.

This year the boards of most of the ministries that are erecting compressor stations have reviewed the progress of their construction. Specific measures have been planned for overcoming the delays that have been permitted. The job now is to implement them as quickly as possible.

11409

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## PIPELINES

### PIPELINE CONSTRUCTION PROGRESS IN UFA AREA DESCRIBED

Moscow IZVESTIYA in Russian 29 Apr 82 p 1

[Article by A. Zinov'yev (Ufa): "220,000 Kilometers Under the Ground"]

[Text] This is just what the Soviet Union's system of trunk pipelines is like today.

Think about this figure, dear reader! Such a majestic scale of work is unprecedented. In just a few years a new branch of the economy--modern highly economical automated pipeline transport--has been created. The length of all the country's oil and gas arterials laid in the ground is more than 5-fold that of the earth's Equator.

Armed with powerful, highly productive equipment and with material and labor resources concentrated at the decisive operating sections, the pipeline builders have showed persuasively how great are the advantages of the planned socialist system of management, and what remarkable achievements are embodied in the labor enthusiasm of the Soviet people, who are carrying out the designs of the Leninist Communist Party.

In accordance with 26th CPSU Congress decisions, pipeline construction during the 11th Five-Year Plan will be 1.5-fold that of the 10th Five-Year Plan. And this program will be implemented successfully.

Here is a current summary of USSR Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises]: on the eve of the 1st of May, the 10,662d kilometer of trunk pipeline will have been put into operation since the start of the five-year plan. Work is going on full blast at this central construction project of the five-year plan, which is what the people have truly named the laying of six specially built trunk lines from West Siberia to the Central Economic Region, and also to Western Europe. Large-diameter pipe will be laid across 28 oblasts and autonomous republics of the RSFSR, the Ukraine and Belorussia.

The construction of this system of trunk lines will exceed in scope of work and amount of capital investment the BAM

[Baykal-Amur Mainline], KamAZ [the Kama Motor-Vehicle Plant], VAZ [the Volga Motor-Vehicle Plant] and Atommash all put together.

Truly it is the great construction project of our time!

Reequipping and the introduction of progressive methods of performing the work--these are the main reserves of the pipeline builders. The CPSU Central Committee paid special attention to this in its recent decree about the work of the Ministry of Construction of Petroleum and Gas Industry enterprises.

On the schematic map of the route that hangs in the office of flow-line operations group chief F. Maksyutov, rivers, ravines, swamps and forests--everything that the pipeline workers will conquer on their 55-km section of the line--is designated by conventional signs. Right away one can see what they have to do here.

"Yes, it is not easy," says Franis Sulitanovich. "You come up out of one ravine and then you drop down into another. And after that it is either a swamp that does not freeze through in the winter, and it shakes under you, or there is still another stream, which, though it is a small one, presents its own difficulty."

Then we went with him along the route for many kilometers. Our ZIL-131, driven by experienced driver Ivan Gvozdikov, cannot get out of all the ravines by itself, so some drivers prefer to go around, seeking more moderate ups and downs. But the ditch, meanwhile, without turning, goes now down, now up, and the strand of pipeline ready for insulation winds alongside it.

The earthmovers go ahead of everyone: with high-powered bulldozers and excavators they hack through the taiga, they clear the cutting in the forest, prepare access roads, and dig the ditch.

Much depends upon the earthmovers. For example, whether the bend of the pipe will be sharp or gentle for descents and rises when crossing ravines depends upon them. If it is sharp, then the erectors who follow will have to make inserts, or so-called "sags" at the gaps, and to erect pipe with small individual pieces, which later complicates the insulating process, and in such places the measured pace of the pipeline insulating and laying column slips--and as a result each ravine takes 2 or 3 additional days. Where there are smooth dips and rises, it is sufficient to insert into the pipelength one or two curved pipes that are bent on a special machine, and it is no longer necessary to make fractional inserts. But for this purpose, one must not be lazy when digging the ditch.

"We strive to insure a rapid pace for the erectors and insulators," says chief of the earthmoving section Zul'fat Sadykov. "Thus during the last 2 weeks we have passed through 7 ravines, all without a single 'sag.' Our bulldozer operators M. Aminev and R. Rakhimov and excavator operators N. Gerasimov, A. Pogorelets, Kh. Nafikov and Yu. Shungurov, who are great experts, smooth out the steepest inclines of the ravines."

This spectacle is impressive: a column of pipelayers, which hold the weight of the multiton strand, moves smoothly and persistently, cleaning and insulating it and laying it in the ditch. There is a short conversation with the column chief, R. Ramazonov. Despite his youth, he has had much experience in his complicated and

difficult job: he has built two strands of the Surgut-Polotsk oil pipeline and the strand of the Urengoy-Petrovsk gas pipeline. He has chosen reliable people for his column: both the pipeline-layer operators and the reel operators. The column's pace is 1,200 meters per shift.

"We are thinking about bringing it up to 1½ km," says the column chief. "Now we have to just conquer this strip of ravines, and then we will get a smooth place."

Taking advantage of a stoppage, Ramazanov once more discussed with each of the operators their actions at the next descent, which was being started, and once more they all went there together. And soon the column of high-powered machines again had started up, and, with a measured and smooth pace, they raised and lowered the whole gigantic strand of pipeline.

Trucks droned from morning to night on the approaches to the route, providing a high-capacity flow of freight that was being sent to the builders and erectors. You can't get along here without trucks: they haul pipe and welded pipelengths, and they deliver tractors, mobile housing, fuel and lubricants, and various items of equipment to the most remote places.

The drivers do shock work, especially before the spring floods. Thus the collective of Motor Pool No 8 had to haul 22 km of pipe from the Udel'no-Duvan' dock in Birskiy Rayon and 13 km of pipe from Krasnyy Klyuch, Nurimanovskiy Rayon, out to the Bashkiria segment of the route, to deliver 25 km of pipe sections to the segment, and also to extend assistance to SMU [Construction and Installing Administration] No 5 of Nefteprovodmontazh [Pipeline Erecting Trust] in the exportation of tens of kilometers of separate pieces of pipe from the Saygatka Railroad Yard of Permskaya Oblast to an intermediate base of the Urengoy-Uzhgorod gas pipeline. And the transport workers coped with this task successfully. Thanks to precision organization of the work on the route and to reliable repair services, the productivity of the pipe haulers of the motor pool was 1.6-fold higher than the USSR Minneftegazstroy average.

The route hardens people, and they grow, along with the construction project. Hero of Socialist Labor A. Khaliullin supervised one of the flow-line groups of the Vostoknefteprovodstroy [Pipeline Construction Trust of the Eastern Economic Region] during erection of the Urengoy-Petrovsk trunk gas pipeline. This collective has several times been the winner in the competition throughout Minneftegazstroy. Constant study and improvement of methods for organizing the work that will yield the greatest effectiveness at least cost in labor and time, strong labor discipline, and the integrated conduct of all types of work with high quality, helped it. And, of course, high skill, selflessness and constant mutual support. On the Urengoy-Novopskov route A. Khaliullin now organizes the work as a deputy chief of Administration No 3 of Vostoknefteprovodstroy. And a former column chief of his flow-line group R. Fayzullin, was now in charge of an erecting section that is doing work in Permskaya Oblast.

"People supplied with modern high-powered equipment decide the success of the work on the route," says A. Khaliullin. "We have such equipment in the full amount for organizing and conducting continuous, flow-line type operations by the main operating columns. Gentlemen beyond the ocean have been trying in vain to impose conditions on us, breaking trade contacts with our country. Soviet machinebuilders have created powerful pipeline layers based on the TT-330 tractor. Pipelaying

giants made in Sterlitamak have passed their first tests on the Urengoy-Petrovsk trunk gas pipeline route."

The same kind judgments about these machines have been heard also from many other pipeline workers. Everywhere great interest is being displayed in the Sterlitamak machinebuilders' work, thoughts are being expressed about the design solutions for the various components, and people are asking when capacity will be built to increase output of the giants for the taiga pipeline routes. We visited the place where they were born--Sterlitamak's Stroy mash plant. The plant's chief designer, M. Yudayev, pointing to photographs of these firstlings, says:

"The first test model of the domestic taiga pipelayer was built in 1977. During its tests the design for tooling the machine was improved, and its technical characteristics were bettered."

The improved pipelayer successfully passed state operating tests on northern routes in the insulating and laying columns. The first, second and third were set up successively at other places, but, whatever the number, it displayed enviable stability, it was responsive to control, and it entered well into the overall assemblage of machinery. The TG-502 proved to be more convenient and easier to control than similar American-made units.

In the document that accepted the test model, members of the state commission--representatives of Minsel'khormash [Ministry of Tractor and Agricultural Machine Building], Minstroydormash [Ministry of Construction, Road and Municipal Machine Building], and Minneftegazstroy, reported that the TG-502 pipelayer corresponds to the highest quality category for the indicated parameters of its technical specifications and design solutions: it recommended series production of the TG-502 and certified it to be in the highest quality category.

In 1980 Sterlitamak assembled and sent 26 machines to the underground trunk gas pipeline builders, and the next year 115 of the giants of the taiga routes were produced. At the end of 1981 production space that will enable the output of 250 machines per year will go into operation at the plant. According to the standards, up to 1½ years are allowed for assimilating this capacity. The situation imposes its own deadlines. The pipelayers are urgently needed for erecting gas trunk lines. Therefore, the construction-machinery manufacturers have worked out and are implementing measures for accelerated assimilation of the new space. And now in 1982, 250 pipelayers will be built.

M. Yudayev tells us that the designers are working right now to simplify the hydraulic system, lengthen the boom by 1 meter, and increase lifting and lowering speeds. All this should improve the machine's operating qualities. The construction machinery makers have established technical servicing centers for their pipelayers on the routes, at Nadym, Ufa and Penza. Their mission is to perfect the design for its manufacturability. Right now 30 of the domestically made pipeline layers are working on the Bashkiria section of the Urengoy-Novoposkov arterial.

"And they are working well," says deputy chief of Glavvostoktruboprovodstroy [Main Administration for Pipeline Construction in the Eastern Economic Region] Ye. Lavrent'yev. "In the name of the route workers, I would like to express great gratitude to their creators and to wish them successes in increasing the output of these machines and in further improving them."

Yevgeniy Aleksandrovich also stated that 15 flow-line groups have been established within the main administration for erecting arterials. They have been provided with adequate amounts of the necessary equipment. The pipeline workers' living conditions have been greatly improved. Forty buses recently arrived for the pipeline-route workers who are on rotating duty. Warm railcar housing, dining cars, stores and recreation rooms have been placed at their service in the housing settlements, and they have been provided with television sets, transistor radios and periodicals. We visited these settlements: actually, they have everything for full-fledged recreation after their difficult rotation duties.

"Each of those who works on the route understands well what enormous responsibility has been vested in them, the trunk gas pipeline builders," noted Ye. Lavrent'yev. "And each strives to do everything to justify this high trust, to put the gas pipeline into operation ahead of time, thereby placing the riches of Urengoy at the national economy's service. We are confident that we shall fulfill our obligation: we shall complete erection of the linear portion of our section of the Urengoy-Novopskov arterial, which goes through Tyumenskaya, Sverdlovskaya and Permskaya Oblasts and the Bashkirskaya ASSR, 2 or 3 months ahead of schedule--in September or October of 1982."

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## PIPELINES

### GAS PIPELINE CONSTRUCTION PROGRESS IN SVERDLOVSKAYA OBLAST REPORTED

Moscow EKONOMICHESKAYA GAZETA in Russian No 13, Mar 82 p 9

[Article by M. Makhlin (Sverdlovskaya Oblast): "The Urals Leg"]

[Text] At a section for building the Urengoy-Central Economic Region trunk gas pipeline in Sverdlovskaya Oblast.

A hurriedly arranged All-Union briefing of journalists that was dedicated to construction of the Urengoy-Central Economic Region gas pipeline system and the Urengoy-Uzhgorod export gas pipeline has been held in Krasnotur'insk, Sverdlovskaya Oblast. Participating in it were workers of the central press, and also the republic and oblast presses of the regions through which the route will pass. The deputy ministers of the gas industry S. S. Kashirov and construction of petroleum and gas industry enterprises A. P. Vesel'yev spoke to the journalists and answered their questions. They noted that, thanks to the socialist competition that was being widely promoted, the prerequisites had been created for introducing the five underground trunk lines with a total length of about 20,000 km ahead of time, during the 11th Five-Year Plan. The gas pipelines will be brought up to design capacity in the year of their startup, instead of in the third year of their assimilation.

The journalists visited facilities of the Urengoy-Petrovsk gas pipeline, which is being introduced this year, and they met with the builders. Manager of the Propaganda Section of the CPSU Central Committee I. A. Zubkov took part in the briefing's work.

Four strands of the Urengoy-Central Economic Region gas pipeline and the export trunk pipeline to Uzhgorod will pass through the north of Sverdlovskaya Oblast in a single "corridor" during the 11th Five-Year Plan. The distance between the lines will be some tens of meters. The advantage here is obvious. The builders have been enabled to concentrate their forces in comparatively small areas, taking into account the prospects for creating stable worker collectives at sections that have been allocated. The compressor stations also are being placed in proximity to each other, enabling them to be operated at least expense and the personnel requirement to be reduced.

The arterials are compared to rivers, not without reason. A 1420-mm diameter gas pipeline moves 32 billion m<sup>3</sup> of the "blue fuel" per year under a pressure of 75 atmospheres. In power potential this is equivalent to the annual generation of electricity of all the hydroelectric power stations of the Angara-Yenisey cascade.

Pipelines of this diameter have been laid in our country for 10 years now. Soviet scientists, designers and builders have emerged in this matter as pioneers, having opened up a new page in world pipeline-construction practice. Let us note that across the ocean they are only starting to realize one project that is comparable in scale to what has already been accomplished in the USSR.

Every 100 km the next compressor station (KS) gives impetus to the flow. Over 100 km the pressure weakens by 20 atmospheres. At the KS it is raised up again to the required level. At the stations, which were designed by YuzhNIIgiprogaz [Southern Scientific-Research and Design Institute for the Design of Gas-Industry Facilities] (Donetsk), 8 turbines with a capacity of 10,000 kw each are being installed. Twenty KS's with a total capacity of 1.6 million kw, the equal of two Dneproges's [Dneprovskaya Hydroelectric Power Station imeni V. I. Lenin], are to be erected on the Urals leg of the trunk gas pipeline network.

In the north of Sverdlovskaya Oblast four KS's are being readied for introduction in April-June--the Pelymskaya, the Ivdel'skaya, the Krasnotur'inskaya and the Lya-linskaya. I managed to visit three of them.

#### The Pelymskaya

These were fine March days. Under the sun's rays, especially blinding amid the snow, the thermometer's column went no lower than -28 degrees. For the builders of the Pelymskaya KS, who are accustomed to -40 degree cold and violent snowstorms, such a temperature, especially without a wind, seemed to be a true sign of spring. At the site hot work was boiling.

Last year the SMU-2 [Construction and Installing Administration] collective of Komsomol'sktruboprovodstroy [Komsomol'sk Pipeline Construction Trust] from Tyumenskaya Oblast arrived in the taiga, close to Pelym settlement. It was not easy to become accustomed to the new place, far from the main base. The current winter turned out to be severe.

"From March to the end of the year our collective, then small in numbers, did little more than half a million rubles' worth of work," said SMU-2 chief A. Tsyba, "much less than planned. Reinforcements of people and equipment were received recently. The monthly program has crossed the million-ruble threshold. We are counting on making up in the near future for what had been neglected, so that in the first half of the year the KS units will be turned over for operation precisely on time."

Here in Pelym, incidentally, as at other northern points on the route, one feels especially severely how difficult and costly it is to deliver the gas, which is customarily thought of as a cheap fuel, and, alas, not to be conserved, at home or in production. Gasfield workers and pipeline builders know the real price of their product. Therefore, each KS is being equipped with recovery boilers, which

will permit waste heat to be used for heating premises. A strict regime for saving material resources has become a law for the construction project.

At Pelym, for example, the integrated brigades of A. Buravilin and R. Khalilulov have committed themselves to reducing the cost of the work charged to them by a whole percent. For this purpose, they have each planned to save 3-4 tons of metal, 250 kg of electrodes, 15 tons of fuel, 10 tons of cement, 3,500 kw-hr of electricity and much lumber, propane and oxygen.

"Another augmentation should arrive soon. We want to show the newcomers an example of a thrifty attitude toward the job," remarked A. Buravilin. "We save metal, thanks to rational layout work. Major reserves have been found in the welding operations."

The so-called pioneers' settlement was spread out close to the site: several tens of four-place "barrel" huts equipped with the required conveniences, including television. Unfortunately, the settlement's dining room is crowded, it is not always possible to buy necessities in the store, and the organization of leisure time is not up to the mark--I heard this from many construction workers. Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises] should react in all earnestness to their just remarks. Moreover, in the words of Deputy Minister A. Vesel'yev, the output of mobile prefabricated premises for cultural and personal-amenity purposes, including sports complexes, has been arranged for the pipeline builders.

#### Ivdel'skaya

A subunit of Boksitstroy [Bauxite Construction Trust] and its subordinate organizations are building this compressor station. The KS is considered the most important construction project in Glavsreduralstroy [Main Administration for Construction in the Central Urals Economic Region]. A USSR Mintyazhstroy [Ministry of Construction of Heavy Industry Enterprises] order about starting its erection was dated July 1981. The deadline for startup was set for 29 April of this year. This is twice as rapid as the standard.

"The engineering level of the design that was received did not satisfy us, and the main administration's specialists proposed a number of improvements in the constructional portion," explained deputy chief of Glavsreduralstroy B. Furmanov. "We were able to execute a fully prefabricated variant for the KS's erection. Thus, footings were made from modules weighing up to 22 tons. Only the footings under the equipment were cast in place. The outfitted-module method was mastered with the help of Sibkomplektmontazh. I would like to call the attention of YuzhNIIgiprogaz designers to the need to consider more fully the possibilities of industrializing construction."

"We approached organization of the work from a fresh start," Boksitstroy manager V. Shtan' added to the conversation. "Right away we undertook to erect the KD's buildings, and then we were engaged in bringing in the utilities and service lines. As a result, it was possible to combine some operations. Both the builders and the equipment installers are working in parallel. Two and a half months were won this way. I will note especially the selfless labor of the young erectors from Uralstal'konstruktsiya [Association for the Erection of Steel Structure in the Urals Economic Region]. Over a period of 2-3 weeks they delivered the building's

framework, although they had had to work on the high iron at -40 degrees, and under a burning wind."

Clad in lightweight sandwich-type panels, the KS building is still surrounded by the cranes' open-work structure. The mechanisms are used simultaneously by the builders and the erectors. The Ivdel'skaya KS will go into operation by the First of May. Experience in building it will be of advantage to Glavsreduralstroy collectives at other sites.

#### Krasnotur'inskaya

Installation of the turbine units at the Krasnotur'inskaya KS was commenced 100 days prior to the deadline for startup. The prime contractor--Seroenergostroy [Serov Power-Engineering Construction Administration] of Uralenergostroy [Urals Power-Engineering Trust]--opened up a broad front for operations by the equipment installers. The best forces of the Central Urals power-engineering builders are pulling together at the construction project.

"Representatives of 16 specialized USSR Minenergo [Ministry of Power and Electrification] and Vostokmetallurgmontazh [Trust for the Construction of Metallurgical Facilities in the Eastern Economic Region] organizations are working side by side with our collective," said Uralenergostroy deputy manager V. Popov. "The task being carried out is most complicated. Actually, we are reducing the erection time for the KS almost down to one-third of the standard. The concentration of forces at a limited area has required that the course of the work be organized in accordance with combined schedules and that competition of interdependent workers be arranged.

\* \* \*

The task set for the builders of the trunk gas pipeline network is being fulfilled in a short time. Everywhere, at every section, the communists are in charge of the competition for accelerating the pace. At the KS construction projects, party organizations and temporary party groups, which unite all communists participating in the construction work, have been established. Enormous organizational work on the solidarity of the collectives and on mobilizing them for solving overall tasks was performed by the Sverdlovskaya Oblast CPSU Committee.

We visited the Urals leg of the Urengoy-Petrovsk route. Work on the Urengoy-Novopskov and Urengoy-Uzhgorod trunk pipelines is going on ahead of schedule. Here, as at the most recent strands of the system, advanced experience in reducing the construction time of the first gas-compressor station is advantageous. In all, more than 200 KS's will have to be introduced during the five-year plan. It is also important to draw conclusions from miscalculations and errors.

At some places, as experience indicates, it is desirable to start at once the erection of permanent settlements which, after serving the builders, will be transferred to the KS's operating personnel. The specifics of the rotating-personnel method, which is used at some construction sites, and the organization of ideological support of the project must be considered more fully. Incidentally, some collectives have begun the practice of sending letters of gratitude to the place of permanent residence of the best workers. This moral incentive measure has yielded a great educational benefit.

The pipeline builders are expecting Minelektrotekhprom [Ministry of Electrical Equipment Industry] to accelerate the series output of automatic welding sets. These units will increase labor productivity severalfold when large-diameter pipe is being welded. However, electrical-equipment industry enterprises are slow to master production of the equipment. USSR Minchermet [Ministry of Ferrous Metallurgy] and Minkhimprom [Ministry of Chemical Industry] have been called upon to arrange for the output of pipe that is insulated at the factory.

The builders themselves must be prepared to lay thicker pipelines, which are designed for a pressure of 100-120 atmospheres. Their throughput will be increased 1.5-fold. Test sections still are to be erected. Leningrad power-machine builders have already begun to manufacture the appropriate highly productive equipment. Conversion to the construction of gas pipelines of the new class is to be performed within the current five-year plan.

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## PIPELINES

### GAS PIPELINE CONSTRUCTION PROGRESS IN KURSK REGION DESCRIBED

Moscow IZVESTIYA in Russian 23 Apr 82 p 3

[Article by V. Kulagin (Kursk): "Work That Is a Song"]

[Text] The call from Kiev came at 0900 hours sharp. It had been planned to hold at 1500 hours a teleconference at the level of the deputy ministers of the leading branches. N. Khorev, chief of the Kursk Trunk Gas Pipeline Administration of the Order of Lenin Khar'kov Gas Transport Association notified the supervisors of all services over the central dispatching communications about the forthcoming conference on pipelines and immediately started to get ready to go to today's most important facility of the Yelets-Kursk gas pipeline--the Kursk Compressor Station. But Nikolay Antonovich had not managed to get up from the table when into his office came a stocky man of middle age, with weatherbeaten face and fixed stare. After putting his cap on the table, the arrival introduced himself:

"Ovchinnikov, chief of the Operations Section of the Shebelinka Motor Transport Enterprise of the All-Union Ukgazprom [Ukrainian Gas Production Association].

And although N. Khorev was seeing this man for the first time and he was in a rush to get to the compressor station, he seated the visitor and in a minute or two, after finding out the purpose of his visit at such an early hour, at once livened up, saying:

"Remarkable....It is remarkable...."

The remarkable thing was precisely the fact that I. Ovchinnikov had come here from far away to solve the problem of creating a base here for an automotive detachment that would service the Kursk segment of the Urengoy-Uzhgorod gas pipeline, including the facilities due for startup this year--the first phases of the Kursk and Cheremisinovo compressor stations. Heretofore, large-load KRAZ's and MAZ's with trailers had had to drive the many tens of kilometers from Shebelinka to Kursk. And the pressure at the great construction project was rising each day. And while previously four or five vehicles had had to haul equipment to Kursk, now a dozen is not enough. And so Khar'kov transport workers had decided to place a motor pool close to the sites of the main developments on the supergas pipeline--to create small field facilities for 12-15 heavy-load trucks at Kursk and Cheremisinovo, with equipment and repair services, and with mobile housing and dispatcher communications.

"It's not enough to say that our deadlines are unprecedented, for they are, literally, fantastically short. The 'blue fuel' should be rushing to the western border over the Urengoy-Uzhgorod line in a year and a half!" N. Khorev, while rushing to the compressor station, glanced through the Volga's windshield at the black earth, which had been freed of snow. Obviously, he was pondering when the ground would dry out and it would be possible for the rotary excavator to go there to begin to dig the ditch for the pipe--almost  $1\frac{1}{2}$  meters in diameter--for the gigantic river of gas.

Its Kursk segment possibly is not so big--about 350 km. It stretches from the border of Lipetskaya Oblast to the border of Sumskaya Oblast, over Orel and Kursk land. Several high-capacity compressor stations will rise up here. While only pioneer detachments of the All-Union Erecting Association Soyuzspetstyazhstroy, which have started preparatory work on the first phase of the Cheremisinovo Compressor Station, have arrived at Dolgoe, Orlovskaya Oblast, at Kursk the first compressor station will go into operation in 2-2.5 months. Subunits of the All-Union Association Kursktyazhstroy are working here.

We arrived at the erecting site of this station at midday. All around was a mash of mud, but a road laid with reinforced-concrete slab leads here from the highway. The same types of access routes have been laid to the administration office, the mobile housing and domestic services, the casting yard for the prefabrication of consolidated modules for structure to be erected, and to the footings, where installation of the station's operating equipment has begun. In the erecting zone, arranged in a row at a slight distance from each other and sparkling with fresh paint, are the Ural's gas turbines, which have just been delivered from the Ryshkovo Railroad Yard by 100-ton trailers. Six turbines will be installed at the first compressor station, which will serve the Yelets-Kursk gas pipeline.

"Installation of the modules for purification and cooling of the gas has already been completed," explains chief of Construction and Installing Administration No 1 of Kurskpromstroy [Kursk Industrial Construction Trust] S. Brykalov. "The footings under the turbines are completely ready. What is more, not just for the turbines but also for all the station's equipment. Soon we shall put the gas turbines in place, and then we shall erect 'little houses'--shelters--for them."

Open-work steel structure--the basis for the turbine shelters--has been erected above the footings, where the powerful gas-pumping units will rise up. The same structure can be seen not far from this area. There, as S. Brykalov explained, the frameworks of the buildings for the dining hall, the power units, the operations center, and modules for the lubricating activity and various auxiliary services are being erected. All the facilities should be turned over in unison and strictly according to the critical-path schedule.

"We have been provided with practically all the mechanisms, the equipment arrived by the established deadlines, and the operations, both basic and auxiliary, are being conducted ahead of schedule," says S. Brykalov. "In June we shall turn the station over to the operators and right away we shall transfer to erection of the second compressor station, which is directly on the Urengoy route."

As is the case everywhere on the Urengoy-Uzhgorod arterial, at Kursk also an integrated technological flow-line group, which consists of specialized subunits that are doing the construction and installing work in the full amount on definite gas



pipeline segments, is operating. USSR Mintyazhstroy [Ministry of Construction of Heavy Industry Enterprises] subunits are erecting the compressor stations, and Minneftegazstroy [Ministry of Construction of Petroleum and Gas Industry Enterprises] subunits are building the linear portion of the gas pipeline route, from the digging of ditches, the welding of pipe into pipelengths, the transporting and insulating of the pipe, the laying of the pipe into the ditch, and the backfilling of the ditch, to even the recultivation of the ground. In particular, on the Kursk segment, these operations are being performed by celebrated collectives of the Krasnodar, Stavropol' and Rostov truboprovodstroy [pipeline construction trusts].

This stretch of the Urengoy gas pipeline has proved, perhaps, to be in a more advantageous situation. For those same subunits that had just completed the laying of the 214-km gas strand from Yelets to Kursk were included in the construction here. It is at that comparatively small bridgehead that these forces were tested prior to the powerful spurt on the Urengoy gas pipeline. The precise interaction of all the detachments of gas pipeline builders was worked out, a materials and equipment base was created for them, and multilateral ties between out-of-the-way subunits and the lead subunits of the integrated technological flow-line group were set up.

Practically when the last kilometers of the Yelets-Kursk gas pipeline had just been laid, all the Glavyuzhtruboprovodstroy [Main Administration for Pipeline Construction in the Southern Economic Region] detachments that had worked on this section began to once to weld 1,420-mm pipe into pipelengths for the Urengoy gas pipeline and to transport them to the route. In a short time they were able to create a substantial backlog of accomplished work. We became convinced of this on the same day that we came to one of the most lively installers' sites of the Kursk gas pipeline segment, a site that was spread out on the edge of the old village of Okhchevka, close to the city of Shchigra.

A feeling of the majesty of the started enterprise will come over you with the first steps about the erecting site. There are enormous stacks of pipes made of blue steel which have been placed with precision, as if they had been poured there. There are the bright flashes of the electric welding. Powerful lifting cranes and road tractors.... And smooth streets of mobile housing with television antennas on the flat roofs.... At the edge of the housing settlement is the office of the third section of Construction and Installing Administration No 4 of Krasnodartruboprovodstroy [Krasnodar Pipeline Construction Trust], which is operating here. At the entrance to the office we also meet the chief of the section of Construction and Installing Administration No 4, V. Azanov.

"Fifteen kilometers of pipelengths have gone out to the route," says Veniamin Andrianovich, rubbing his hands with satisfaction. "And in all, 25 km have already been rotary welded, and the strand has been lengthened almost 10 km by overhead welding. The lads are working simply excellently. When they do not do 1½ times the norm they do not leave the work stands. Up to 1 kilometer of pipelength per day is welded...."

We are standing beside a welding stand of a preparation brigade. The brigade leader himself, fitter A. Chistoprudov and welder A. Belovitskiy were doing the joint of an ordinary pipelength. In bare minutes the two pipes had been centered, the so-called root joint had been run and dressed, and a hot pass and a sealing run had been made of it, and again, the place of the welding had been dressed to a shine. Only then was the pipelength sent to the semiautomatic welding machine. There it



falls into the hands of the family element of a most experienced welder, holder of the Order of Lenin N. Mozgovoy, and his wife Nina, who performs the function of apprentice welder. For a quarter of a century they have been laying gas pipelines in various parts of our country. It was impossible to take one's eyes off their meticulous work. The final forming of the pipelength joint takes place on this stand by means of the semiautomatic Styk-1, and the strictest check of the joint's quality is made.

Defectoscope operator M. Aksenov, using X-ray equipment, photographs the joint on photographic film, studies attentively the whitish strip that lies on the dark background, marks down on a special stub the number of the joint, the seal of the welder, the diameter of the pipe, and the date of the welding, and he puts down his own evaluation and issues the "conclusion" to the welders' brigade. And the numbered film goes into the files, where it will be kept until operation of the gas pipeline ceases. So at any time, among even the thousands of kilometers of super-long gas pipeline, it will always be possible to look up both these pipes and this pipelength, and the makers of any joint by this film. Thus the gasline builders have a procedure, and each of them is dedicated to following it.

Together with the leader of the quality-monitoring brigade, N. Novginov, we went into the laboratory and asked M. Aksenov to show an X-ray picture of any defective joint. But in his voluminous archive there proved to be simply no such pictures.

"And there should not be any," welder N. Mozgovoy declared firmly. "Such an important route....It is impossible to allow even one slip here."

The integrated brigade of 10 men had spent exactly half an hour joining an ordinary pipelength. Tomorrow powerful road tractors will take it out onto the route, where this pipelength will be "fastened" to the strand, and it will be insulated and prepared for laying in the deep ditch.

When we again went to the office of the erecting section, its chief, V. Azanov, talked about his comrades who were building the gas pipeline, and about those with whom he had worked thousands of kilometers on the country's gas routes. With a certain special fervor in his voice he named the Babanskiy brothers--Aleksandr, Ivan and Viktor--who several years ago had come to his detachment as quite young and inexperienced welders, but who nowadays are transmitting the secrets of their trade even to foreign colleagues. It was evident to all that, in a paternal fashion, family dynasties and their devotion to the difficult migratory trade of pioneers of the blue arterials were dear to Veniamin Andrianovich. And he named from memory a father and son, the Petrakovs--Ivan Prokop'yevich and Aleksandr, and the welders' brigade leader Boris Rudikov and his wife, Nina, the supply person of the section....

V. Azanov also shared the near-term plans for improving the cultural and personal-amenities situation of the residents of the temporary settlement. A special construction brigade has been established for improving its amenities. When warm weather comes, it will start to lay sidewalks and space out lawns. A new dining room, club, guest house, and small kindergarten will be equipped. And, of course, the establishment of a repair base, a filling station, and parking for large-load vehicles will be completed for the full development of operations directly on the arterial....

Then Veniamin Andrianovich went up to the large map, took off his cap, and said pensively:

"What a thing we have here: where is it that fate hasn't taken us....We have done the Central Asia-Central Economic Region, Bukhara-Ural, Ukha-Torzhok, Orenburg-Novopskov and Soyuz gas pipelines. So many famous names! But here now the old Kursk village of Okhochevka, which is not well known and is not marked on all the maps, has entered our hearts....The work--what a good song it is!"

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## PIPELINES

### BRIEFS

**PIPE MANUFACTURING EFFICIENCY--Chelyabinsk--**The collective of Department No 6 of the Chelyabinsk Order of Lenin Pipe-rolling Plant has won a new labor victory in the competition in honor of the 60th anniversary of the forming of the USSR. Since the start of the year it has manufactured 5,000 tons of pipe above the plan, and in so doing has saved 220 tons of rolled plate. The Uralites' highly effective work is the result of the systematic introduction of scientific and technical achievements into production work. Each year tens of valuable technical and organizational solutions are put into use here. For example, the installation of an additional arc on the mills for the external welding of pipe 1,220 mm in diameter has enabled the amount of waste to be reduced appreciably, and, thereby, the output of acceptable product to be increased. This one innovation alone will enable the department's collective to save more than 400 tons of metal these days. Leading in the anniversary competition are the brigades of welders' foremen T. Tukhvatullin and M. Konstantinov. Together they have given more than 1,600 tons of pipe of excellent quality above the plan. [By V. Zenkovskiy] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 16 Apr 82 p 1] 11409

**GAS PIPELINE IN KARAKUMY--**Erectors of Shatlykgazstroy [Shatlyk Trust for the Construction of Gas Industry Enterprises] welded the last joint on still another gas pipeline in the Karakumy. The natural gas that will be sent over the new 110-km arterial from the Mollaker field will feed the Mariyskaya GRES and will also serve as basic stock for obtaining "fertility vitamins" at the Turkmen Nitrogen Fertilizer Plant. [By V. Gavrichkin] [Text] [Moscow IZVESTIYA in Russian 13 Apr 82 p 1] 11409

**GOR'KIY PIPELINE WELDING--**The first 100 large-diameter pipes have been welded on the Gor'kiy segment of the Urengoy-Uzhgorod gas pipeline. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 15, Apr 82 p 3] 11409

**WORLD'S GREATEST PIPELINE CAPACITY--**The share of pipeline transport, including gas pipelines, is 30.8 percent of the freight turnover for all types of transport. It has no equal in the world in capacity. The USSR has 132,000 km of arterial gas pipelines and 57,500 km of oil pipelines. [Text] [Moscow EKONOMICHESKAYA GAZETA in Russian No 16, Apr 82 p 13] 11409

**PIPELINE CONSTRUCTION IN LITHUANIA--**Kaliningrad--The first kilometers of the gas pipeline over which "blue fuel" of the Urengoy field will be making a path from Vilnius to the Baltic's shores during the current five-year plan has been laid close to Kaliningrad. On Lithuania's land, the strand of welded pipe has

approached Kaunas. The collectives of Trust No 2 of Soyuzgazpromstroy [All-Union Association for the Construction of Gas-Industry Enterprises] and Administration No 3 of Lengazspetsstroy [Leningrad Trust for Special Construction of Gas Industry Facilities] will work in opposite directions. [By K. Kasyukov] [Text] [Moscow IZVESTIYA in Russian 7 Apr 82 p 1] 11409

PERM'-AL'MET'YEVSK OIL PIPELINE--The erection of the final section of the Perm'-Al'met'yevsk oil pipeline was completed a month ahead of the scheduled deadline. A collective of Tatneftprovodstroy [Tatarskaya ASSR for Oil Pipeline Construction] laid the 150-km segment of the arterial in less than a year. More than 10 water obstacles were surmounted. [Text] [Moscow KRASNAYA ZVEZDA in Russian 25 Apr 82 p 1] 11409

POWDERED PAINT FOR PIPELINES--Yaroslavl'--The first 250 tons of a new powder coating has been produced at the Lakokraska Association in Yaroslavl'. It is intended for painting underground gas pipelines. Already this year the enterprise has produced hundreds of tons of powdered paints. They have improved physical and mechanical properties and greater strength. [By V. Kurapin] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 31 May p 2] 11409

ALMAZNAYA TURBOCOMPRESSORS INSTALLED--The erection of the turbocompressors of the Almaznaya station, which is situated on the Urengoy-Petrovsk trunk gas pipeline route, has been completed ahead of time. Three gas pipelines from Urengoy with a total length of more than 700 km will pass through Permskaya Oblast. [Text] [Moscow KRASNAYA ZVEZDA in Russian 4 Apr 82 p 1] 11409

UKRAINIAN PIPELINE BUILDERS' AMENITIES--Zakarpatskaya Oblast--The laying of the largest trunk gas pipelines from Urengoy is going on full blast on routes thousands of kilometers long in Russia, the Ukraine and Belorussia. Engineering preparation in the Uzhgorod direction also has been promoted. More than 260 km of gas pipeline must be built in Ivano-Frankovskaya and Zakarpatskaya Oblasts in 2 years. The Mukachevskiy Workers' Supply Section of Ukgazstroy [Ukrainian Gas Pipeline Construction Association] and its branch in the city of Dolina, Ivano-Frankovskaya Oblast, have been charged with servicing the construction workers. "We already have," says [Workers' Supply Section] chief S. I. Mogan', "experience in servicing the builders of the Soyuz gas pipeline. Right now we are still operating railcar dining rooms and motorized traveling stores, but the erection of stationary trade facilities has started at the builders' future production bases. Dining rooms that seat 500 each and stores for selling commodities for everyday use will be built in 4 villages. Food will be sent in thermos containers from base dining rooms to the most remote sections--places where the pipe is being welded, at the forest cuttings and high in the mountains.... [By I. Myshalov] [Text] [Moscow SOVETSKAYA TORGOVLYA in Russian 13 Apr 82 p 1] 11409

'POCKETS' FOR WEIGHTING PURPOSES--Novyy Urengoy--Urengoy builders have used an original method for fastening gas pipelines to ditch bottoms in swampy localities. Until now pipes in water-filled ditches were supplied with reinforced-concrete weights. For this purpose, a thousand or more tons of reinforced concrete had to be placed per each kilometer of line. And it was not at all easy to haul such large amounts of freight in the Tyumen' North environment. Now singular "pockets" made out of panels of nontextile material, into which soil taken from digging the ditch is inserted, are used. As tests indicate, this material possesses high resistance to breakdown and high chemical resistance. [TASS] [Text] [Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 13 Apr 82 p 2] 11409

PETROLEUM TEKHNIKUM MODERNIZATION--Volgograd--The laboratories of the Volgograd Gas and Oil Tekhnikum are being supplied with new equipment ahead of schedule, although some of the existing equipment had been installed about 3 or 4 years ago. This indicates rapid progress in our country's gas industry. The tekhnikum graduates middle-level specialists both for the Soyuz gas pipeline, the Urengoy-Uzhgorod-Western Europe and other gas pipelines which are now being equipped with the newest control systems. The Kvarts-2M, Elektro-2, Vega-2, Zashchita-3, Signal-2M and 3M, Impul's-2, Tsikl-1 and other systems are now being installed in the tekhnikum's laboratories. These systems automatically regulate the speed and volume of delivery of the product and its consumption on operating gas and oil pipelines and it switches on emergency systems when the requirement therefor arises. On finishing the tekhnikum, the graduates voluntarily go to the most remote places, where automated control systems are being installed or operated on gas arterials. [By A. Chemonin] [Text] [Moscow IZVESTIYA in Russian 28 Apr 82 p 2] 11409

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